

ALLELE

different forms of a gene

can be dominant, recessive, codominant

ASEXUAL REPRODUCTION

only one parent needed

results in genetically identical offspring

mistakes in copying can lead to mutations

CHROMOSOME

a package of DNA with many genes on it

humans have 23 pairs of chromosomes

CODOMINANT ALLELES

neither allele is dominant or recessive

combinations occur

both alleles contribute to phenotype

CLONE

a genetically exact copy of an organism

DNA

DeoxyriboNucleicAcid

carries the genetic material

DOMINANT ALLELE

trait always shows up if present

**recessive allele does not have an effect
if paired with it**

**capital letters are used for this
in a genotype**

GAMETE

an organism's reproductive cells

often called sex cells

egg cells and sperm cells are gametes

GENETICS

scientific study of heredity and genes

GENE

basic unit of heredity

control the traits that living things have

passed from parents to offspring

each trait comes from a pair of these

GENETIC ENGINEERING

replaces specific genes in DNA

changes organism's characteristics

**gene therapy used to change a gene
that causes a genetic disorder**

GENETIC CROSS

a deliberate mating or mixing of genes

**a way to understand the
characteristics of offspring**

GENOTYPE

genetic makeup of an organism

shows the gene combination for a trait

a pair of genes, one from each parent

(M , M) (M , m) and (m , m) are examples

HEREDITY

passing traits from parent to offspring

HETEROZYGOUS

called hybrid for a trait

**has two different genes or
alleles for a trait**

HOMOZYGOUS

called purebred for a trait

**both alleles or genes are
the same for a trait**

HYBRID

genes for an inherited trait are different

MUTATION

**change that occurs in part of
an organism's DNA**

can be a mistake in copying

can be caused by environmental factors

**may or may not produce noticeable
changes**

NUCLEUS

**where DNA (and chromosomes)
are located in a cell**

PHENOTYPE

physical characteristics of an organism

how an organism appears

white fur or black fur for example

PEDIGREE

**tool used by scientists to trace a trait
through many generations of a family**

PROBABILITY

**A mathematical explanation of
the chance that something will happen**

PUNNETT SQUARE

**tool used to predict results
of a genetic cross**

**gives possible combinations of genes
from two parents**

**a way to determine the
possible genotypes of a trait**

PUREBRED

**both alleles or genes for
an inherited trait are identical**

RECESSIVE ALLELE

**does not appear when
dominant allele is present**

**trait only appears if
both alleles are recessive**

SELECTIVE BREEDING

**chooses parents with
particular characteristics**

**produces offspring with
more desirable characteristics**

**Has been used for thousands of years
with plants and animals**

SEXUAL REPRODUCTION

needs male and female gametes

**results in offspring that are
genetically different from both parents**

**gets half of its genes from one parent
and half from the other parent**

TRAIT

a physical characteristic of an organism

alleles are instructions for specific traits

brown eyes is an example